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(54) **Modular cabinet.**

(57) Modular cabinet (10) to hold and transport floppy-disks, mini-disks, cards and other office materials in an organized manner, which comprises a cabinet case (39) and at least one extractable drawer (12) and can be combined with other cabinets and includes at least one drawer (12) with a front panel (20) and rear closure panel (21), the panels (20-21) being connected by a well (38) having edges (41), the front panel (20) comprising support feet (25), a lower central outer handle (15), an upper information display window (13) and a lock (14).

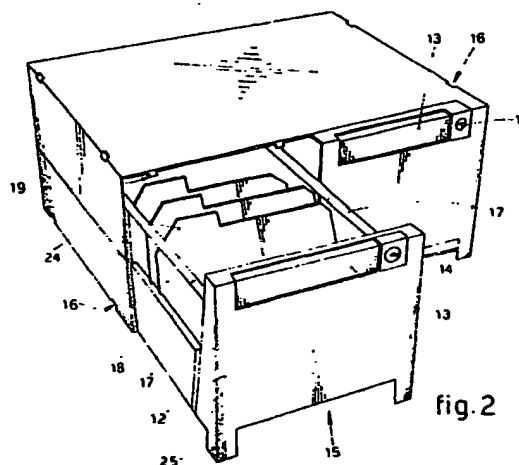


fig. 2

**EP 0 300 134 A1**

# "MODULAR CABINET"

This invention concerns a multi-purpose modular cabinet suitable to hold office materials. To be more exact, the invention concerns a modular cabinet which can be combined with other cabinets by being placed alongside or above or below them and which contains one or more extractable drawers suitable to hold office materials.

Modular cabinets of a combinable type with extractable drawers are known and consist normally of an outer case with or without an upper frontal hinged half-door and an extractable drawer.

Such cabinets comprise external male-female couplings spaced apart which enable the cabinets to be combined with other cabinets. They may hold one or more drawers.

These cabinets are not specially equipped and perform a plurality of usages in which the materials contained in them are normally loose.

Moreover, where the cabinets are combined with other cabinets, the reciprocal fixture system entails not a few problems during assembly and dismantling operations.

Furthermore, the known combinable, modular cabinets do not permit the coordinated containing of floppy-disks or mini-disks, nor do they enable the drawers to be handled independently in a simplified manner.

Besides, the known modular cabinets do not include independent locking systems.

Yet another drawback of the known systems is the difficulty involved in pulling out the drawers after a given number of uses of the drawers owing to the increase in friction between the components, which are made of plastic products.

These and other drawbacks are to be met with in the known modular cabinets.

The present applicant has designed, tested and embodied the present invention so as to obviate the above drawbacks and provide a plurality of advantages.

The invention provides for a modular, combinable cabinet. This modular cabinet may hold one or more extractable drawers which can be operated independently.

Each drawer is equipped advantageously with a lock and a display window, which lists the contents and can be read from several positions advantageously.

Moreover, the geometric straight lines of the conformation of the cabinet make possible easy handling and combination with other extraneous elements and create no security problems for a user.

According to the invention each drawer is provided advantageously with internal independent,

lengthwise, carrying handles suitable to act as a lateral retainer means or as a vertical clamp for the contents or as a carrying handle.

According to the invention each drawer can slide owing to the cooperation of appropriate slide blocks, which are not only replaceable but also have a low field of friction and permit a long usage life without any risks or problems of jamming and distortion.

A further advantage is the fact that the invention provides for the drawer to be fully extractable from the cabinet only when the user specifically so wishes, such extraction being possible also by the use of the cited outer handle.

Moreover, the cabinet has modular dimensions, so that several cabinets can be combined to provide a three-dimensional structure.

These and other special features will be made clearer in the description hereinafter.

The invention is therefore embodied with a modular cabinet according to the features of Claim 1 and the dependent claims.

The attached figures, which are given as a non-restrictive example, show the following:-

Fig.1a gives a three-dimensional view of a modular cabinet according to the invention with two drawers;

Fig.1b gives a three-dimensional front view of a plurality of different modular cabinets placed side by side and stacked one on another according to a desired usage arrangement;

Fig.2 shows the cabinet of Fig.1a with a drawer partly pulled out;

Fig.3 shows the cabinet of Fig.1 with a drawer fully extracted;

Fig.4a shows a partial, vertical cross section of the cabinet of Fig.1;

Fig.4b shows a vertical, lengthwise section of a drawer according to Fig.1;

Fig.5 shows the system for fitting the window which gives information regarding the contents;

Fig.6 shows a possible system for fitting a lock;

Figs.7a and 7b shows a lengthwise, vertical section and a vertical cross section of another drawer, which can be installed side by side with two other drawers in one single modular cabinet;

Figs.8a and 8b show a drawer which can be installed by itself alone in a cabinet.

In the figures a modular cabinet 10 comprises a containing case 39 made by combining two half-cases 11 on a horizontal plane; the two half-cases 11 are clamped to each other by a plurality of male-female anchorage assemblies 29 located on the periphery and on the inside of each containing

case 39 of the modular cabinet 10.

The case 39 of the cabinet comprises at its front an opening equipped with means 19 to limit extraction which serve to limit the extraction of drawers 12; these extraction limiting means 19 serve also to provide closure by means of a lock 14.

In the lower part of the containing case 39 are located reinforcement plates 23 to which are fitted slide blocks 22 that serve to guide the drawers 12 and to simplify and speed up their sliding movement. These slide blocks 22 may consist of individual elements or one single element along an edge and have a substantially h-shaped conformation.

A containing case 39 can cooperate with one single drawer 12 (Figs.8a and 8b) or with two (Figs. 4a and 4b) or three drawers (Figs.7a and 7b) or more.

In the combination example of Fig.1b modular cabinets are shown with one, two and three drawers for each modular cabinet 10.

The modular cabinet 10 may have a constant height for each type, namely for each number of drawers provided, or may have two heights according to the number and dimensions of the drawers. The example of Fig.1b shows modular cabinets 10 of two different heights.

A front panel 20 of the drawers 12 comprises on its front side an outer front handle 15, feet 25, an upper display window 13 which can be read from the front or from above and a lock 14.

A drawer 12 may comprise at its front an auxiliary structural-reinforcement element 43, which may or may not be removable.

As said above, the drawer 12 comprises a front panel 20 and a rear closure panel 21, the rear closure panel 21 being able to abut against the extraction limiting means 19 during extraction of the drawer 12.

Each drawer 12 comprises a well 38, which may be plain without any special equipment, as in Fig.8a for instance, or have its bottom specially equipped with movable partitions 18 which can be fitted when desired.

A drawer 12 cooperates advantageously with internal handles 17 which comprise a pivot 32 capable of being anchored in holes 31.

The holes 31 are conformed and positioned (Figs.4 and 7) to suit the geometric characteristics of the drawers 12 so as to enable the internal handles 17 to be standardized.

Reinforcement plates 44 are included in cooperation with the holes 31 and serve to reinforce the holes 31 and to position the internal handles 17.

The internal handles 17 are able to take up a lateral position (Fig.2) for lateral retention of the contents of the drawer and an extraction position

corresponding with a central position (Fig.3) able to prevent vertical departure of the contents and, at the same time, to enable an individual drawer 12 to be handled independently.

Appropriate lateral 42 and central 142 positioning ribs are included on the inner side of the front panel 20 and rear closure panel 21 in cooperation with the well 38 so as to improve the services of the half-handles and handle 17 respectively.

When modular cabinets 10 are combined with each other, slider clips 28 for clamping purposes are applied to connecting holes 16 provided on the upper and lower lateral edges of the case 39 and can couple together two, three or four modular cabinets 10 at the same time.

Positioner holes 33 cooperating with the movable partitions 18 are located in the well 38 of the drawers 12.

The movable partitions 18 include advantageously a raised indicator portion 24 and also jutting side portions on each side which are able to cooperate with surfaces 41 of edges of the well 38.

The bottom of the well 38 comprises holes 33 and also lateral positioner dividers 30 for correct positioning of the contents.

The display window 13 comprises an L-shaped window body 36 made of a transparent material to create an containment chamber 40 in which the required information can be inserted.

The conformation of the chamber 40 enables the information contained therein to be read on the upper and front surfaces of the chamber 40.

A lock 14 comprises a display body 35 that cooperates with a bolt 27, which includes at its front an entry 34 for a key and cooperates with the extraction limiting means 19.

The window body 36 of the display window 13 and the display body 35 of the lock 14 are clamped in position by reciprocal deformation of their parts.

The drawers 12 comprise continuous lateral slide paths 37 which cooperate with the replaceable slide blocks 22.

## Claims

1 - Modular cabinet (10) to hold and transport floppy-disks, mini-disks, cards and other office materials in an organized manner, which comprises a cabinet case (39) and at least one extractable drawer (12) and can be combined with other cabinets and is characterized in that it includes at least one drawer (12) with a front panel (20) and rear closure panel (21), the panels (20-21) being connected by a well (38) having edges (41), the front

panel (20) comprising support feet (25), a lower central outer handle (15), an upper information display window (13) and a lock (14).

2 - Modular cabinet (10) as claimed in Claim 1, in which reinforcement plates (23) are included on the bottom of the cabinet case (39) with replaceable slide blocks (22) cooperating with lower lateral slide paths (37) comprised on the drawers (12), the replaceable slide blocks (22) having an h-shaped conformation.

3 - Modular cabinet (10) as claimed in Claim 1 or 2, in which two inner handles (17) that can take up a lateral position and a combined central position are included in cooperation with a well (38) of the drawer (12).

4 - Modular cabinet (10) as claimed in Claim 3, in which the inner handles (17) cooperate with holes (31) or with lateral (42) and central (142) positioner ribs.

5 - Modular cabinet (10) as claimed in any claim hereinbefore, in which the bottom of the well (38) comprises positioner holes (33) and lateral positioner dividers (30) laterally and lengthwise.

6 - Modular cabinet (10) as claimed in Claim 5, in which modular partitions (18) having a raised indicator portion (24) and jutting side portions cooperating with edges (41) of the well (38) cooperate with the positioner holes (33).

7 - Modular cabinet (10) as claimed in any claim hereinbefore, in which the cabinet case (39) comprises two half-cases (11) coupled by a plurality of anchorage assemblies (29) on the horizontal plane.

8 - Modular cabinet (10) as claimed in any claim hereinbefore, in which the cabinet case (39) comprises at its sides coordinated coupling holes (16) cooperating with clamping clips (28) during assembly of cabinets.

9 - Modular cabinet (10) as claimed in any of Claims 4 to 8 inclusive, in which the front aperture of the cabinet case (39) comprises means (19) to limit extraction of the drawers (12), such means (19) abutting against the rear closure panel (21) of the drawer (12).

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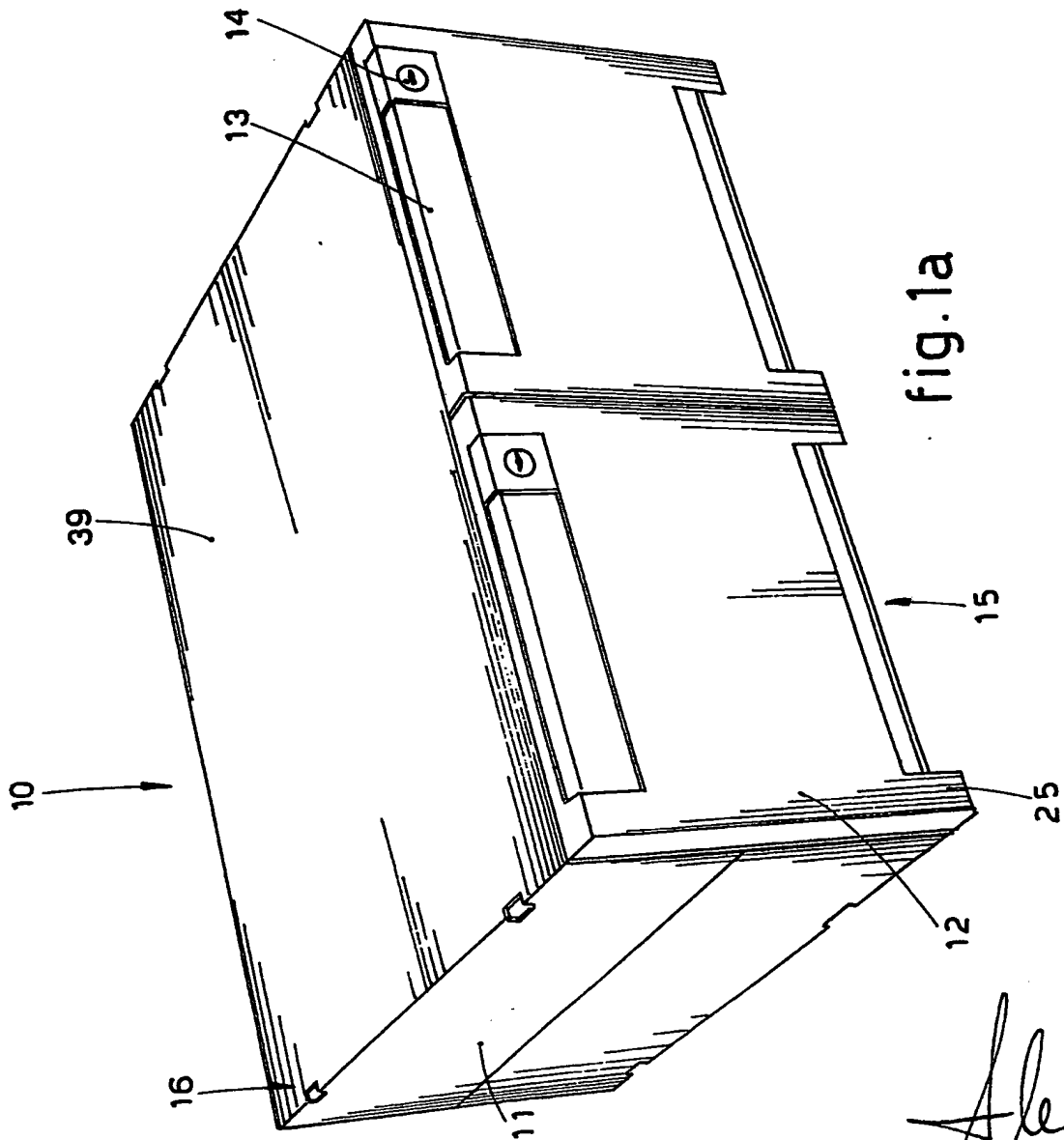


fig.1a

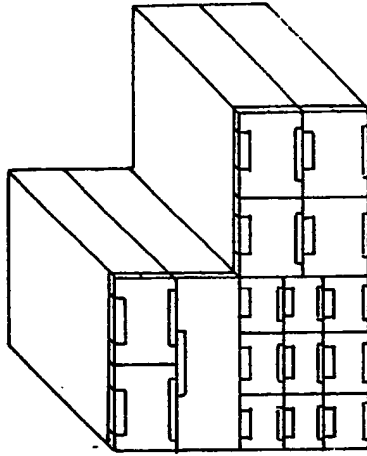


fig.1b

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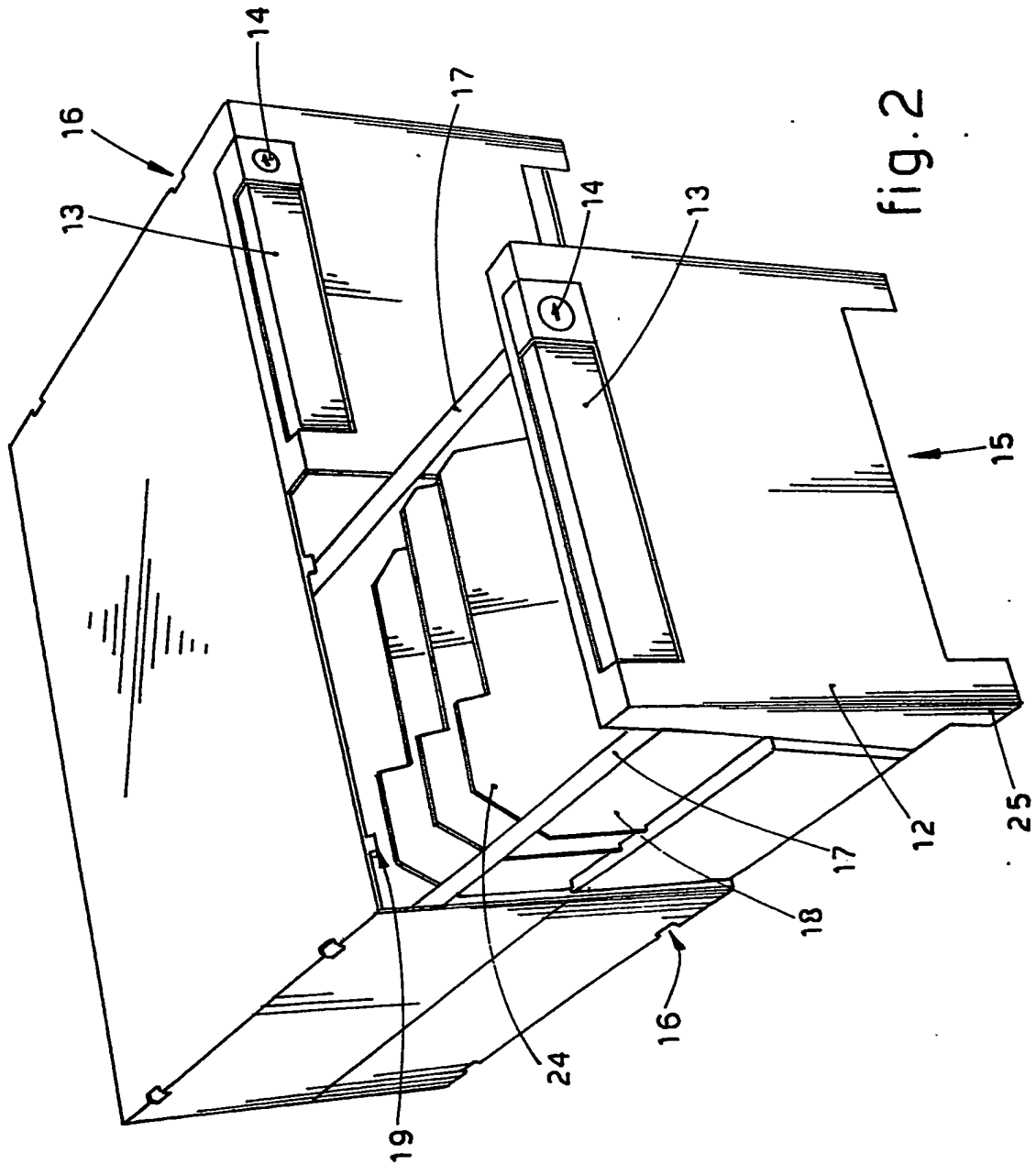


fig. 2

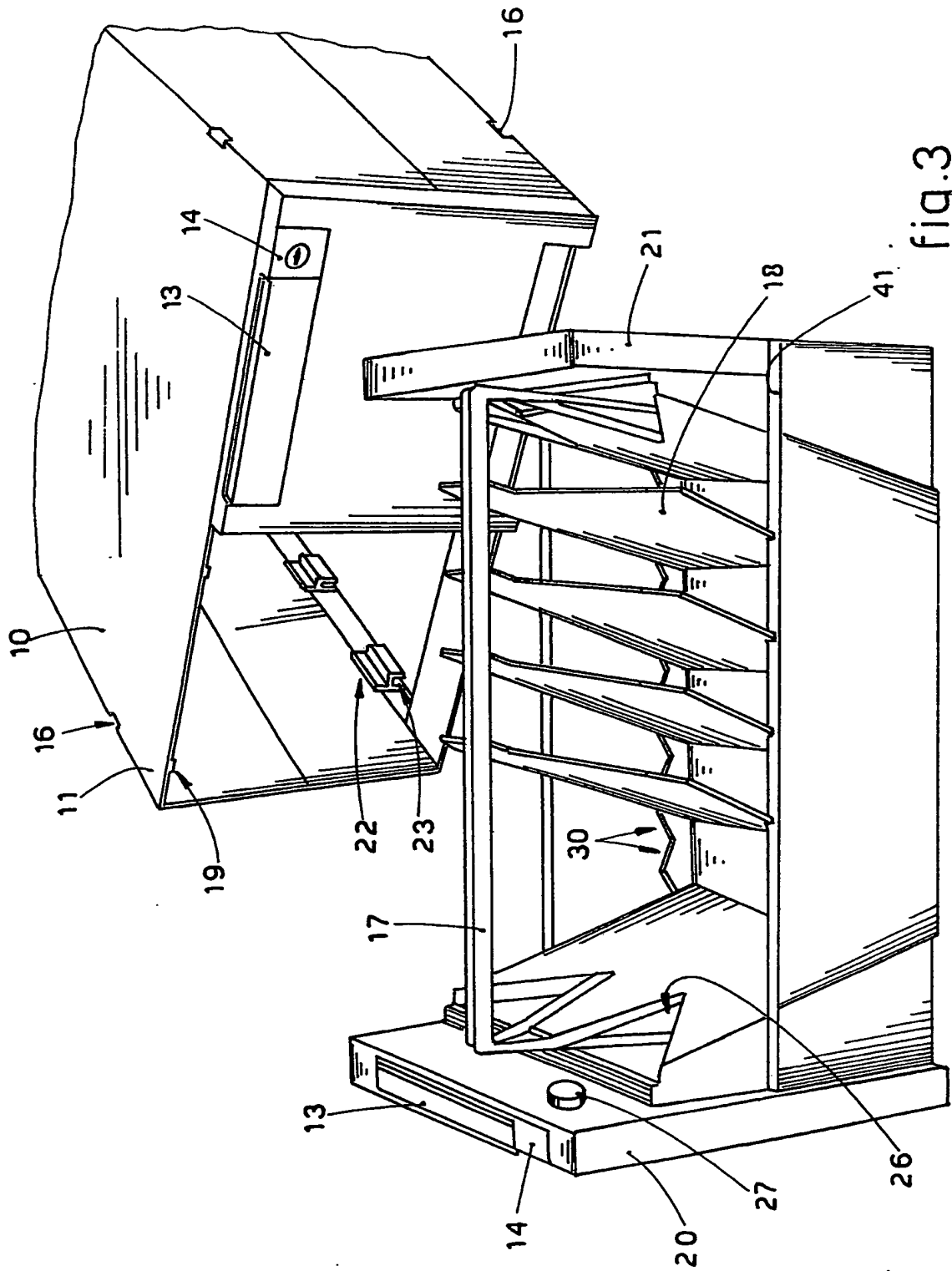


fig.3

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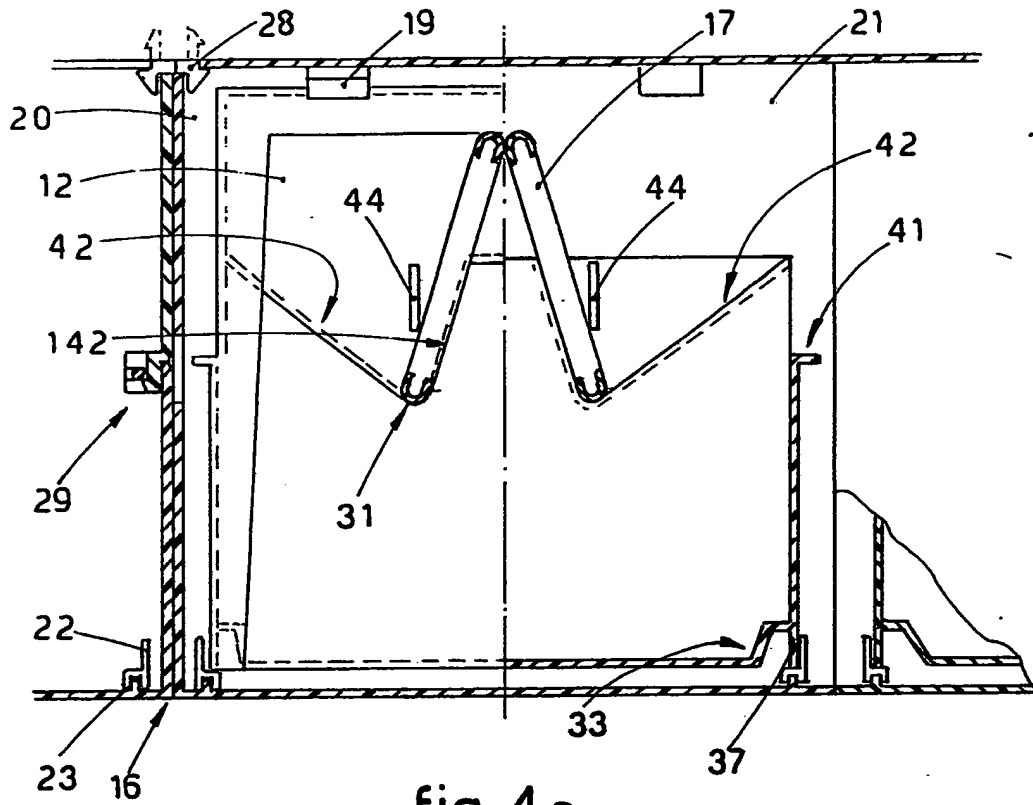


fig.4a

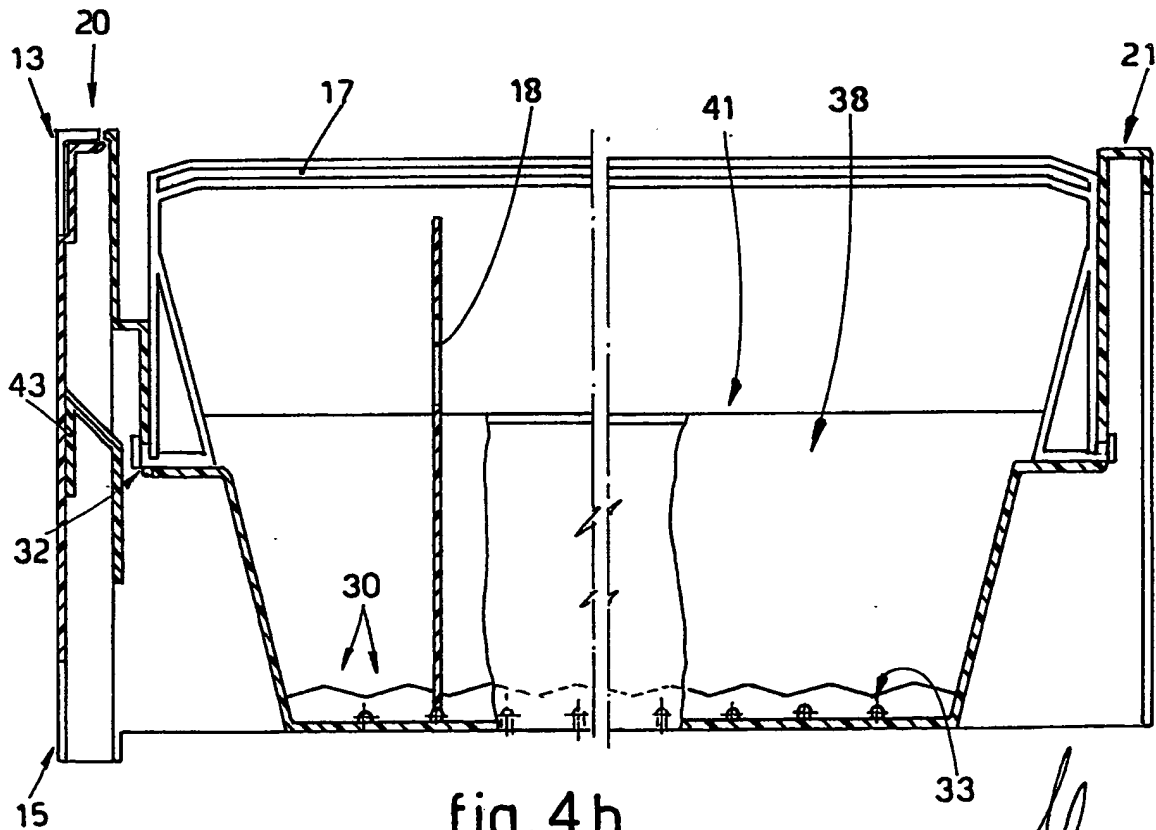


fig.4b

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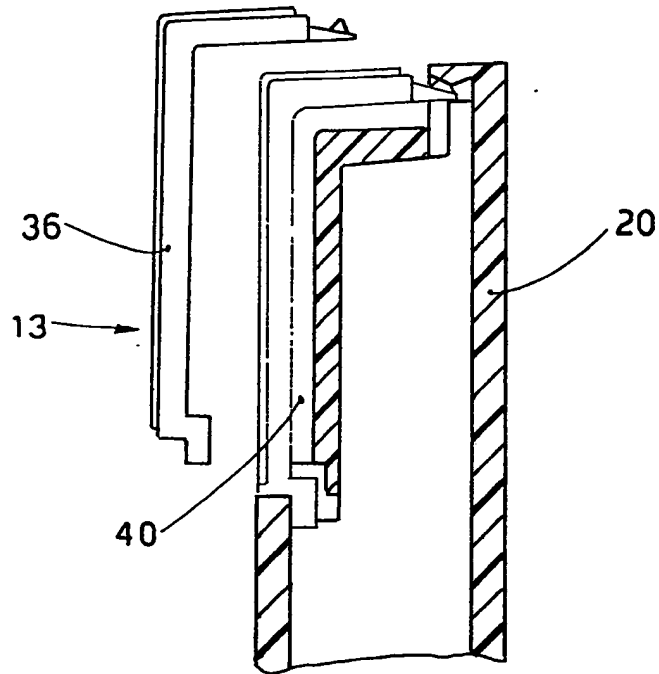


fig. 5

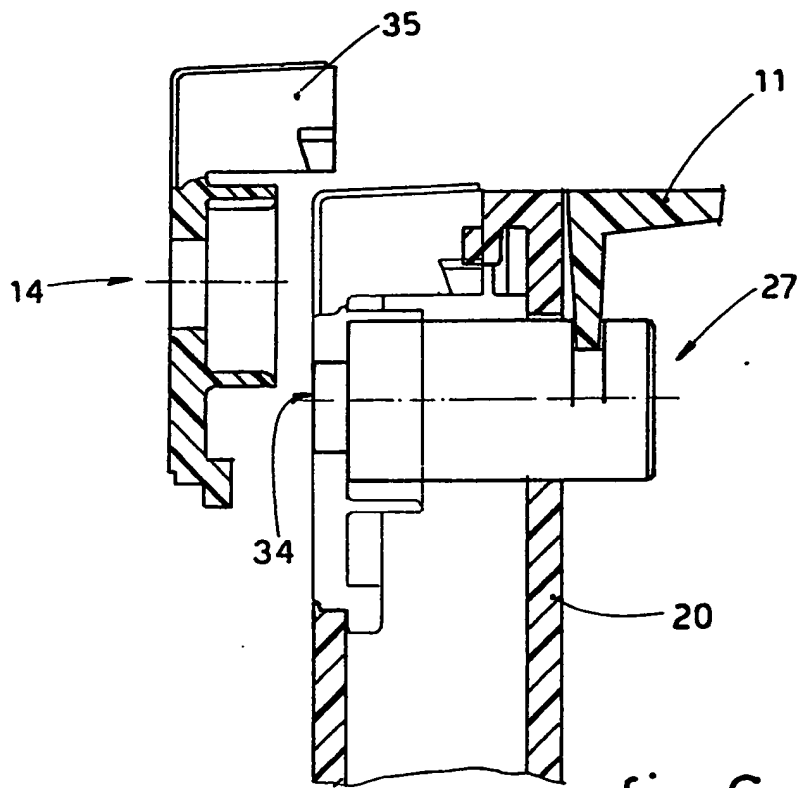
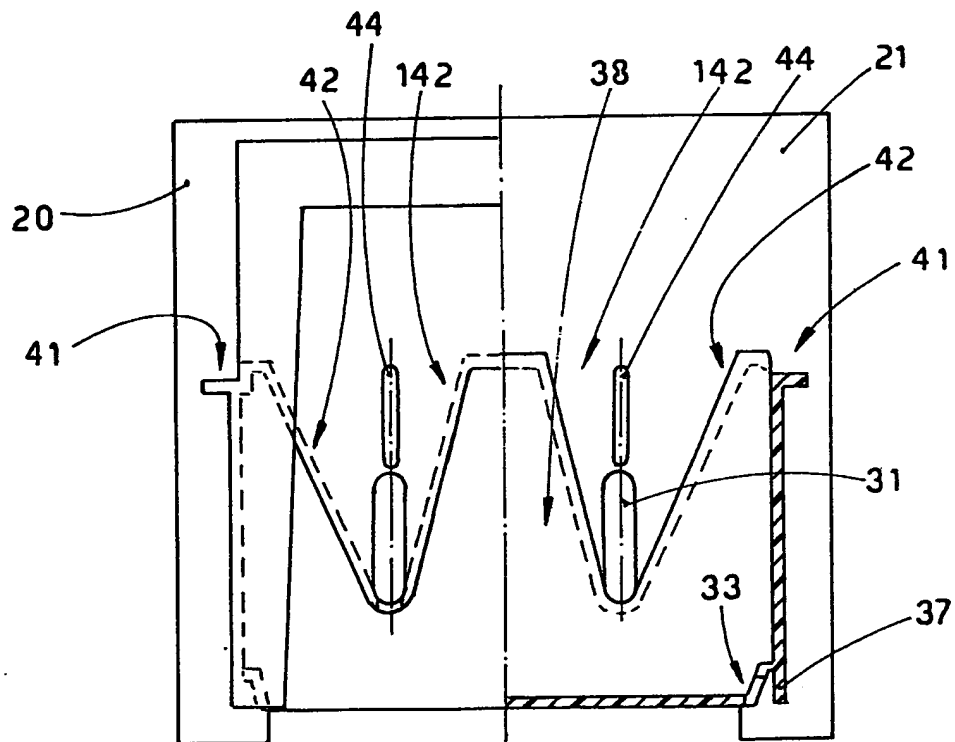
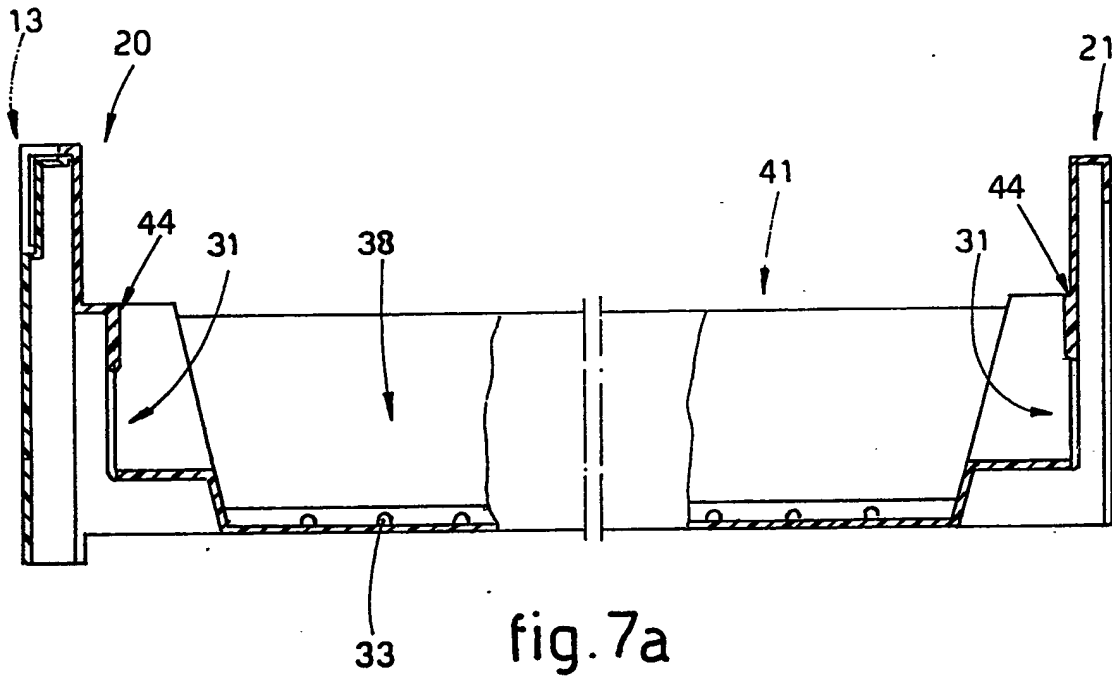


fig. 6

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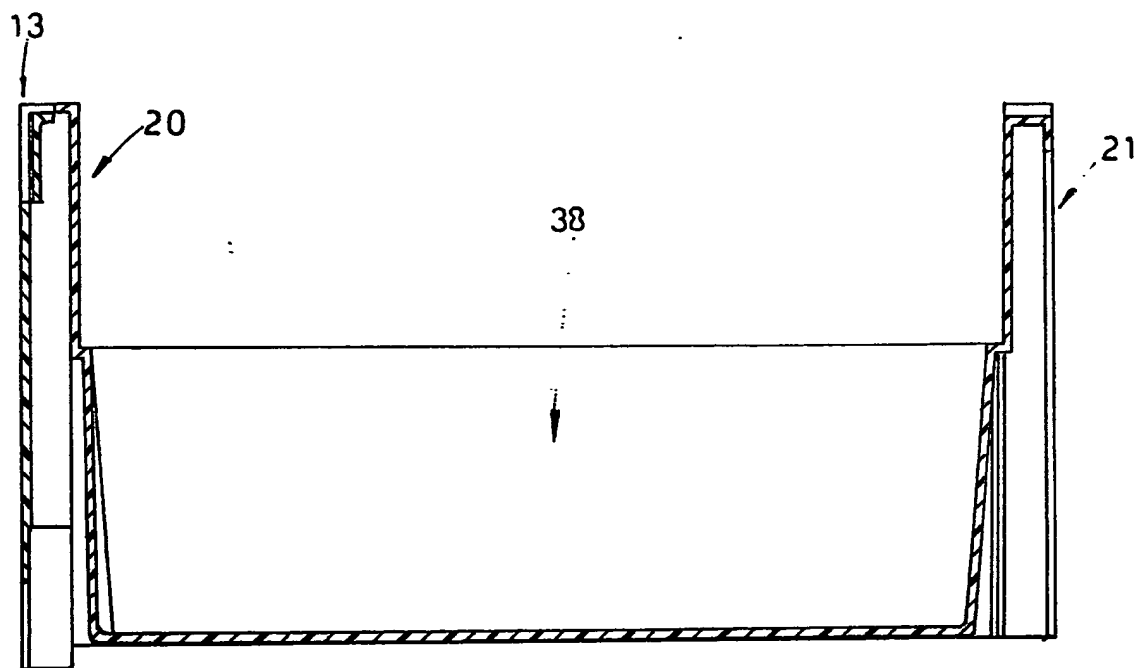


fig. 8a

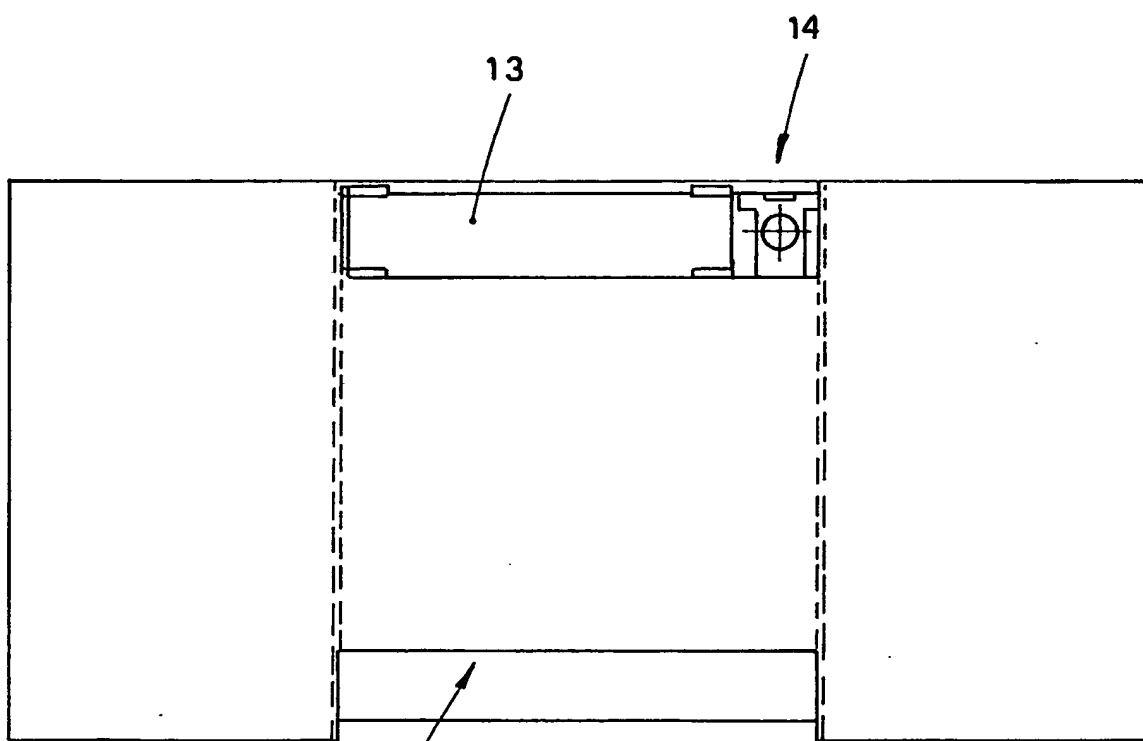


fig. 8b

*Alm*



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
Y	US-A-3 499 695 (STUDINSKI) * Figures 1-2; column 2, lines 47-65; column 3, lines 27-40 *	1	A 47 B 87/02 B 42 F 17/02 B 42 F 17/08 A 47 B 88/00
A	---	5,8,9	
Y	DE-A-1 951 853 (MEYER) * Figures 1-2 *	1	
A	---	2	
A	FR-A-2 355 481 (S.A. FRANCAISE DU FERODO) * Figures 1-4 *	1,7	
A	GB-A-1 079 578 (FRITZ SCHAFFER K.G.) * Figure 1 *	2	
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			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
			A 47 B B 42 F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 26-10-1988	Examiner NOESEN R. F.
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			